UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,536	07/26/2006	Siegbert Steinlechner	3691	8899

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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/587,536	STEINLECHNER, SIEGBERT
Office Action Summary	Examiner	Art Unit	
	PHUONG HUYNH	2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 July 2006*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *8-14* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 July 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☒ All   b)☐ Some * c)☐ None of:

         1.☒ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date *07/26/2006*.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____ .

DETAILED ACTION

Claim Objections

1.   Claims 8 and 12 are objected to under 37 CFR 1.75(i) because these claims set forth a plurality of elements/steps, each elements/steps of the claims should be separated by a line indentation.

- Claims 8 and 12 are objected to because of the following informalities:

-Claim 8, at line 13; and claim 12, at lines 13-14: "the least squares" should be --a least square-- since the limitation "the least squares" lacks proper antecedent basis.

-Limitation "Parameters of an ellipse (w1...w5)" in <u>claims 8 and 12</u> are objected to because it is unclear of what kind of parameters of an ellipse are and unclear of what their range is.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3.   Claims 8-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claims 8 and 12 present in the form of Markush groups and the claims present uncertainty and ambiguity with respect to the question of clarity of the claims [see MPEP 2173.05(h)(I)].

As presented in claims 8 and 12, that "a method for correcting a sensor system **selected from the group consisting of** an angle-measuring sensor system, a distance-measuring sensor system, and both" [see claim 8, lines 1-3; claim 12, lines 1-4] and that "correcting errors of the measurement signals (xi, yi) selected from **the group consisting of** an angle errors, phase errors, and both" [see claim 8, lines 6-7; and claim 12, lines 6-8]; it is unclear to ascertain which features or combination of features from the two groups provided above are selected.

Claims 8 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. Claims 8 and 12 simply recites " in the compensation process, providing offset values (x_0, y_0) from a specified number (N of j=1 . . . N) of pairs of measured values $(x_i\, y_i)$ obtained by rotating a magnetic field, *for the sinusoidal and cosinusoidal measurement signals* $(x_i\, y_i)$ *and* ***correction parameters*** (m_1, m_2) by applying the least squares of errors method and solving a linear system of equations; determining a corrected pair of measured values $(x'_i\, y'_i)$ from each pair of the measured values $(x_i\, y_i)$ in the correction process, whereby determining the corrected pair of the measured values $(x'_i\, y'_i)$ in the correction process based on the relationship $x'_i = x_i - x_0$ and $y'_i = m_1 \bullet x'_i + m_2(y_i - y_0)$" [see claim 8, lines 9-19; and claim 12, lines 9-19].

Accordingly, it is unclear of how to obtain the ***correction parameters*** (m_1, m_2). In other words, the essential method steps of how to obtain ***correction parameters*** (m_1, m_2) are omitted [see Applicant's Specification: Page 6, line 9-Page 7, line 9].

- Claims 12-14 are also rejected because claim 12 sets forth **"a sensor system** for correcting

  carrying out **a method** for correcting a sensor system... comprising the steps of " [see claim 12,

  lines 1-4], which claims both an apparatus and the method steps of using the apparatus in a single

  claim; hence renders the claim indefinite [see MPEP 2173.05(h)(II)].

  Further, claim 11 recites "determining a derivative of the square of errors (g) with respect

  to the parameters of the ellipse ($w_1...w_5$) and setting a particular derivative equal to zero, to

  determine a minimum, and using the particular derivatives to create a linear system of equations,

  so that, using a suitable elimination process, the system of equations is solved for required

  parameters of the ellipse and, <u>based on **this**</u>, the offset(x_0, y_0) and the correction parameters (m_1,

  m_2) are determined" (emphasis added), which renders the claim indefinite because limitation

  "based on this" renders the claim unclear to ascertain what "this" is, and how "this" [is based on] so

  as to [obtain/determine] "the offset values" and "the correction parameters"; further, "so that" is

  unclear of how the steps are connected.

  Claim 13, lines 3-5, recites "variables selected from <u>**the group consisting of**</u> data, parameters,

  and both for elements selected from **the group consisting of** an input, an output, and both"

  renders the claim indefinite because it is unclear to ascertain which features or combination of

  features from the two groups provided above are selected.

Claim Rejections - 35 USC § 101

4.   35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 12-14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 12 sets forth "**a sensor system** for correcting carrying out **a method** for correcting a sensor system... comprising the steps of " [see claim 12, lines 1-4], which claims both an apparatus and the method steps of using the apparatus in a single claim; hence, is directed to neither a "process" nor a "machine", but rather embraces or overlaps two different statutory classes of invention set forth in 35 U.S.C. 101 which is drafted so as to set for the statutory classes of invention in the alternative only. *Id.* At 1551 [also see MPEP 2173.05(h)(II)].

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6.   Claims 8-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Gotz (USPN. 5,612,906).

Regarding claims 8 and 12, Gotz discloses A method for correcting a sensor system selected from the group consisting of an angle-measuring sensor system, a distance-measuring sensor system, and both, comprising the steps of evaluating sinusoidal and cosinusoidal measurement signals $(x_i y_i)$ obtained by scanning a moved measurement object in a magnetic field [see Gotz: col. 4, lines 9-42]; correcting errors of the measurement signals $(x_i y_i)$ selected from the group consisting

of a angle errors, phase errors, and both; providing for the correcting the sensor system a

compensation process and a subsequent correction process [see Gotz: col. 4, line 44-col. 5, line

20];

in the compensation process, providing <u>offset values</u> (x_0, y_0) from a specified number (N of

j=1 . . . N) of pairs of measured values (x_i y_i) obtained by rotating a magnetic field, *for the*

sinusoidal and cosinusoidal measurement signals (x_i y_i) *and correction parameters* (m_1, m_2) by

applying the least squares of errors method and solving a linear system of equations [see Gotz:

col. 5, lines 10-65; and col. 6, lines 1-27]; determining a corrected pair of measured values (x'_i y'_i)

from each pair of the measured values (x_i y_i) in the correction process, whereby determining the

corrected pair of the measured values (x'_i y'_i) in the correction process based on the relationship

$x'_i = x_i - x_0$ and $y'_i = m_1 \bullet x'_i + m_2(y_i - y_0)$, [see Gotz: col. 5, lines 10-45; and col. 6, lines 22-

50]

whereby determining the pair of measured values (x_i y_i) in the compensation process located on

ellipses and satisfying the following equation:

$$f(x,y) = w_1 \bullet x^2 + 2 \bullet w_2 \bullet x \bullet y + w_3 \bullet y^2 + 2 \bullet w_4 \bullet x + 2 \bullet w_5 \bullet y \; 1,$$
whereby

determining parameters of an ellipse ($w_1 . . . w_5$) using the least square of errors (g) method [see

col. 5, lines 10-45: the method of least squares error\], with $$g = \sum_{i=1}^{N} f(x_i, y_i)^2$$:= min [see Gotz:

col. 6, line 51-col. 7, line 27].

Regarding claim 9, Gotz discloses that determining an angle (α) to be measured from particular corrected pairs of the measured values (x'_i y'_i) using an algorithm col. 5, lines 35-65 and col. 6, lines 20-50].

Regarding claims 10, Gotz discloses that determining an angle (α) to be measured in the correction process based on the relationship [see Gotz: col. 5, lines 35-65 and col. 6, lines 1-18].

Regarding claim 11, Gotz discloses that determining a derivative of the square of errors (g) with respect to the parameters of the ellipse ($w_1...w_5$) and setting a particular derivative equal to zero, to determine a minimum, and using the particular derivatives to create a linear system of equations, so that, using a suitable elimination process, the system of equations is solved for required parameters of the ellipse and, based on this, the offset values (x_0, y_0) and the correction parameters (m_1, m_2) are determined [see Gotz: col. 6, line 51-col. 7, line 26].

Regarding claim 13, Gotz discloses that microchip with said sensor system and said compensation and evaluation circuit includes interfaces for variables selected form the group consisting data, parameters, and both for elements selected from the group consisting of an input, an output, and both [see Gotz: col. 5, line 29-65].

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8.   Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gotz (USPN. 5,612,906) in view of Noto et al. (hereinafter "Noto") (USPN. 4,753,308).

Regarding claim 14, Gotz does not disclose that the microchip with said sensor system and said evaluation circuit is configured as a steering angle sensor in a motor vehicle.

Noto teaches the microchip with said sensor system and said evaluation circuit is configured as a steering angle sensor in a motor vehicle [see Noto: col. 3, line 34-col. 4, line 10].

It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the invention of Gotz to include the system, as taught by Noto, for detecting a steering angle [see Noto: Abstract and col. 3, line 34-col. 4, line 10].

Conclusion

9.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHUONG HUYNH whose telephone number is (571)272-2718. The examiner can normally be reached on M-F: 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eliseo Ramos-Feliciano can be reached on 571-272-7925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application

Information Retrieval (PAIR) system. Status information for published applications may be obtained from

either Private PAIR or Public PAIR. Status information for unpublished applications is available through

Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

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866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or

access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Phuong Huynh
Examiner
Art Unit 2857

PH
January 29, 2008

HAL WACHSMAN
PRIMARY EXAMINER